

Survey of buildings, elaboration of urban maps, databases for describing the seismic behavior of historical sites

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# Abstracts

## EURAU 2016

European Symposium on Research  
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Bucharest, Romania



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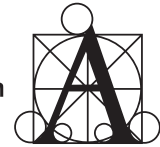
Bucharest, September 28 - 30th, 2016

# IN BETWEEN SCALES

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### EURAU 2016 - In between scales - European Symposium on Research in Architecture and Urban Design

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## Introduction

The eighth edition of the European Symposium on Research in Architecture and Urban Design will be held from the 28th to the 30th of September 2016 in Bucharest.

The seminar will take place at the "Ion Mincu" University of Architecture and Urban Planning from Bucharest in collaboration with the institutions that organized the previous editions:

École Nationale Supérieure d'Architecture de Marseille, on doctoral research (2004);

École Nationale Supérieure d'Architecture et Paysage de Lille, on large scale (2005);

Association des Instituts Supérieurs Brussels-Liège-Mons (IESA), on cultural heritage (2006);

Escuela Superior de Arquitectura de la Universidad Politécnica de Madrid, under the theme cultural landscape (2008);

Facoltà di Architettura dell'Università degli Studi di Napoli Federico II, under the theme venustas (2010);

Faculdade de Arquitectura da Universidade do Porto, on public space and contemporary city (2012);

Faculty of Architecture of the Istanbul Technical University, on composite cities (2014).

The project EURAU is constituted within a network of schools and researchers in Architecture and Urbanism, meeting every two years to share the status of their investigation. In the long-term, it is intended to lead to the creation of a physical meeting and deposit space with all the research undertaken and ongoing in Europe to facilitate the sharing of resources and deepening of knowledge in these scientific areas.

The main concern of the EURAU is to establish itself as a place of debate and discussion of thematic disciplines of Architecture, City and Town Planning.

The theme of EURAU 2016 is "In Between Scales."

Assoc.Prof. Beatrice-Gabriela JÖGER, Arch, PhD, UAUIM, Bucharest, Romania

## History

The EURAU project was initiated by the French Ministry of Culture, when, in 2004, it launched the proposal of an annual symposium for researchers dealing with Research in Architecture and Urbanism. The various editions were organized by different European schools of Architecture with a coordinated effort by a broad group of university professors and researchers.

The purpose of this initiative is to enable the confrontation between researchers concerned with the Architecture and the City on the European scene.

The acronym EURAU describes the congregation of the objectives which motivate these events: EU for "European Union", R for "Research", A for "Architecture" and U for "Urbanism".

## Important Dates

December 2015	Call for papers
January 15th, 2016	Abstract and registration possible
April 15th, 2016 (included)	Abstract Submission Deadline
May 5th, 2016	Notification of acceptance
June 30th, 2016 (included)	Deadline for Final Paper submission for the publication of the proceedings
June 30th, 2016 (included)	Registration Deadline for Authors
September 28th- 29th-30th 2016	Conference dates
October 1st-2nd 2016	Post-Conference Tours

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of qualifying the fringes of the urbanized fabric of contemporary urban areas in central Tuscany, according to the principles of the new Landscape Plan.

The work examines some types of recurrent urban tissue in the flat portions of denser settlement, assuming minimal but key actions for elevating their landscapes' quality: continues in reporting some possible new spatial configurations, drafted in specific guidelines, that are now become official recommendations for urban planning in Tuscany.

**Keywords:** *landscape plan, guidelines, retrofitting, rural-urban fringe*

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Born in Turin (Italy) in 1981, she graduated in Building Engineering (2006) at Politecnico di Torino, and currently is PhD at Politecnico in Cultural Heritage. In academic years 2013 through 2008 she has been assistant, supporting graphics exercises and activities for the lab of classes of Civil drawing, and providing assistance to Laboratory for relief. During July 2008 she had an active participation to "Designing connected places" World Design Capital organized by Columbia University, New York. In the same year she participated at the "significant architectural and graphics on restitution of the church of the Confraternita della Misericordia in Turin", that became the core of her thesis. In parallel she worked for historical research of an historical block of the city of Turin, etc. Since 2007 she works for the Piedmont Region for cultural heritage. Before starting the doctorate she, in the years 2007-2008 has received a grant for research collaboration in the project: "Development of organizational logistics networks to large-scale" POLITECNICO di Torino.

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Giorgio Garzino (Cuneo, Italy, 1960), obtained a degree in Civil and Building Engineering at Turin Polytechnic in 1985. He completed a research doctorate in Building Ergotechnics in 1990. He became a drawing research fellow in the II Faculty of Engineering of Turin Polytechnic. He taught from 1999 until 2008 as an associate professor in the VI Faculty of Building Architectural Engineering of Milan Polytechnic. He teaches in the Department of Structural, Building and Geotechnical Engineering at Turin Polytechnic since 2008. He carries out theoretical and applied research, mainly into urban and environmental as well as design drawing.



## Survey of buildings, elaboration of urban maps, databases for describing the seismic behavior of historical sites

Elena Teresa Clotilde MARCHIS, Giorgio GARZINO

### Abstract

**T**his research, whose ultimate purpose is the protection of historic city centers through the evaluation of the potential seismic risk involves the technical support of different disciplines.

As the matter is characterized within a territorial area, it is obvious the completeness and the ampleness of the necessary knowledge. The contribution of the needed multiple competences, that have broadly been discussed and elaborated, range from the methodological point of view to the historical-critical analysis.

The development of the research allowed to evaluate and to highlight some critical operational steps, that have emerged by analyzing the new case study identified in the southwest of the historic center of Chieri. The survey work must be closely linked to the cognitive context. It means it is necessary to represent the environment geometry of the site, but also to investigate the historical memory dynamics, and last but not least the material characteristic of the architectural artifact. This research, whose ultimate goal is protecting the historical urban centers by assessing their seismic potential risk, required the technical support of different disciplines, ranging from structural engineering to history of architecture.

The survey was not extended on a single block, as was in a previously examined case, but on a larger portion of territory characterized by diversified building types. The urban texture of the historic city center of Chieri, the object of analysis, ranges from the Middle Age, with buildings made of brick masonry and horizontal elements in wooden structure, to the sixties of Nineteen Century, with modern buildings made of reinforced concrete. Inside a single block it is possible to find rich architecture buildings typical of an urban transformation. These buildings, since



the Medieval Age, were consolidated and modified, and are the result of strong urban and architectural transformations through the Baroque period to the end of the nineteenth century.

The research was developed according to the following steps:

- Identification of a sample portion of land characterized by a wide assortment of historical buildings of different architectural features and different uses, with load-bearing masonry structure; definition of the historical stratigraphy from the Middle Ages to the twentieth century.
- Geometrical survey of the actual state and architectural restitution of the buildings in their current state with the identification of the structures, their height, width, openings at ground level and over, survey of common areas such as hallways, stairwells and courtyards.
- Analysis of the fronts, identification of the openings and development of a plano-elevation of buildings, definition of the aspect ratio of each architectural element constituting the block;
- Material identification, making up the resistant stuff, both in material and constructive state, with attention to construction techniques and to the connections between the elements, as defined by the DPCM 09/02/2011, for the assessment and mitigation of seismic risk of the cultural heritage in relation to technical standards for construction as reported in section 4.1.1
- Identification of the hierarchy and constructive relations between the building and the urban context.
- Identification of structural carriers as unidirectional or bidirectional load-bearing walls, of vertical columns or masonry pillars or galleries. Analysis of the presence of spaces with a significant interstory height and the presence of buildings sleeve simple or double sleeve.
- Identification, where possible, of the areas of discontinuity and materials inhomogeneity due to different construction phases (additional bodies, cant, substitutions of certain parts of buildings or floors, insertion of new structural elements

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and balconies etc.).

The research has unveiled a set of further problems and the development of a new working method consisted in the proposal of new symbology more articulated and with greater detail of information. The deepening of the study led to the differentiation of the building openings by placing an arrow close to the access driveways and walkways. In the presence of particular interest vertical features a dot was placed, colored in black if the vertical element is placed in the lower floors (arcades, cloisters, etc.) and in white if the structure is situated at the highest floor (lodges). The presence of buildings of reinforced concrete or the presence of parts bearing walls was represented with a filled 45° crossed line.

As a final result of the research that now can be assumed as an operative proposal, the end product of the research is the graphical map of the analyzed area, a representation of fast and easy reading by means of symbols studied and elaborated on the basis of the Directive for the assessment and seismic risk reduction.

In a Country like Italy, strongly influenced by seismic risk, a detailed map for the earthquake risk assessment is therefore mandatory up to a deep detailed level and it must be in accordance with the general norms and laws, and this has verified on the field. The practical aspect of the results and their friendly usability can help to trust in the possible use extended to large scale. Only in this case the effort of the initial research will offer the practical effects for a safer utilization of our urban spaces. The memory of the past not only is matter for erudition and celebration of glorious times, but is mandatory for a complete consciousness of the present time, and for a critic view of the future.

**Keywords:** *Architecture, Seismic risk, Cultural heritage, Mapping, Representation, 3D modelling, Integration of techniques, Earthquakes*

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Graduates from University of Naples "Federico II" in 1990. She attends a postgraduate course in Interior design at the University of Naples. PhD in Interior Design at Milan Politecnico in 1998. In 1999 she is awarded a scholarship at University of Naples, that ends in 2001. From 2002 to 2008 she teaches in different degree courses of Exhibit and Interior Design. Researcher at University of Naples since 2008, since 2010 professor at the PhD in Architectural Composition at the same university. Her research focuses on small-scale architecture, domestic space and exhibit design, taking part in national and international competitions, publishing monographs, essays and articles.

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Architect, teaches architectural design at the Department of Architecture, University of Naples "Federico II". In 1995 he founded corvino + multari with Vincenzo Corvino, a practice based in Naples and with offices in Milan.

Tutor in national and international workshops, curator of exhibitions and books, member of critics, scientific and jury committees, he was honoured twice the European Prize "Luigi Cosenza" (2000, 2003) and the Premio Centocittà (2001). The Pirelli Tower restoration in Milan awarded him the Gold Medal for Italian Architecture (2006) and the European Aluminium in Renovation Award (2007). He took part in several conferences (Milan, Rome, Naples, Turin, Florence, Graz, Krakow, Warsaw, Paris, Berlin, London, New York); projects and works have been featured in personal and group exhibitions and published in architecture magazines as Casabella, Abitare, Domus, Area, d'A, the plan, Concept, World Architecture.